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(FILE 'HOME' ENTERED AT 12:44:10 ON 17 MAY 2006)

FILE 'CA' ENTERED AT 12:44:21 ON 17 MAY 2006

E BENCO J/AU

L1 14 S E4-5
L2 5 S L1 AND (CALIX? OR BUTYLCALIX?)
E NIENABER H/AU
L3 12 S E4-5
E MCGIMPSEY /AU
L4 2 S E4
E GRANT MCGIMPSEY /AU
L5 2 S E4
L6 0 S L3-5 AND (CALIX? OR BUTYLCALIX?) NOT L2

=> d bib,ab l2 1-5

L2 ANSWER 2 OF 5 CA COPYRIGHT 2006 ACS on STN
AN 141:147938 CA
TI A highly selective fluoroionophore for the detection of lithium ions
AU **Benco, John S.**; Nienaber, Hubert A.; McGimpsey, W. Grant
CS Department of Chemistry and Biochemistry, Worcester Polytechnic
Institute, Worcester, MA, 01609, USA
SO Journal of Photochemistry and Photobiology, A: Chemistry (2004), 162(2-3), 289-296
AB N-(9-methylanthracene)-25,27-bis(1-propyloxy)-4-tert-**butylcalix**[4]arene-azacrown-3 (I) was synthesized and tested as a fluoroionophore for the selective detection of lithium cations. The efficiency of photoinduced electron transfer in this fluoroionophore is sensitive to the presence of lithium ions. When exposed to lithium ions in a 75:25 (vol./vol.) dichloromethane/THF solvent mixt., the mol. acted as an "off-on" fluorescence switch exhibiting a >106-fold enhancement in fluorescence emission intensity. Selectivity studies demonstrated that I effectively discriminates against sodium and potassium: log KLi,Na=-3.8 and log KLi,K=-2.3.

L2 ANSWER 3 OF 5 CA COPYRIGHT 2006 ACS on STN
AN 139:45971 CA
TI Potassium fluoroionophore
IN **Benco, John S.**; McGimpsey, W. Grant; Nienaber, Hubert
PA Bayer Corp., USA; Worcester Polytechnic Institute
SO U.S. Pat. Appl. Publ., 10 pp.
PI US 2003119195 A1 20030626 US 2001-29542 20011221
US 6660526 B2 20031209
PRAI US 2001-29542 A 20011221
AB A fluoroionophore for the fluorescent detection of potassium ions.

L2 ANSWER 4 OF 5 CA COPYRIGHT 2006 ACS on STN
AN 138:128861 CA
TI A fluoroionophore for detection of potassium ions: 9-anthryl-substituted azacrown ether covalently linked to a 1,3-alternate **calix**[4]arene
AU **Benco, John S.**; Nienaber, Hubert A.; Dennen, Katherine; McGimpsey, W. Grant
CS Department of Chemistry and Biochemistry, Worcester Polytechnic

Institute, Worcester, MA, 01609-2280, USA

SO Journal of Photochemistry and Photobiology, A: Chemistry (2002), 152(1-3), 33-40

AB N-(9-methyl-anthracene)-25,27-bis(1-propyloxy)calix[4]arene azacrown-5 (II) and its model compd. N-(9-anthrylmethyl)aza-18-crown-6 (I) were synthesized and tested as fluoroionophores for the selective detection of potassium ions with a view to the use of II in the fabrication of potassium ion sensors. Compd. II consists of a 1,3-alternate calix[4]arene group covalently linked to an azacrown ether that is N-substituted with a fluorescent anthracene group. This compd. acts as an off-on' fluorescent indicator for ion complexation. In dichloromethane soln., compd. II exhibits good sensitivity to potassium ions and forms a 1:1 fluoroionophore-ion complex. Studies demonstrate that II is selective for potassium over other alkali metal cations, with excellent selectivity over sodium and lithium ($\log K_{K,Na} - \log K_{K,Li} \leq -3.5$) and moderate selectivity over rubidium and cesium ($\log K_{K,Rb} - \log K_{K,Cs} \sim -1$). Sensitivity of II to potassium is considerably enhanced in dichloromethane in comparison to methanol/dichloromethane mixts., presumably due to two effects: a hydrogen-bonding interaction of methanol with the azacrown nitrogen atom, and poor solvation of the ion by dichloromethane, the latter creating a driving force for complexation.

L2 ANSWER 5 OF 5 CA COPYRIGHT 2006 ACS on STN

AN 137:241308 CA

TI A sodium ion sensor based on a covalently-linked aminorhodamine B-calix[4]arene chromoionophore

AU **Benco, John S.**; Nienaber, Hubert A.; Grant McGimpsey, W.

CS Bayer Business Group Diagnostics, Medfield, MA, USA

SO Sensors and Actuators, B: Chemical (2002), B85(1-2), 126-130

AB A fluorescent sodium optode based on a chromoionophore consisting of aminorhodamine B covalently-linked through an amide bond to a calix[4]arene was developed. The optode, fashioned by incorporation of the chromoionophore into a single component polymer matrix, operates from on/off switching of aminorhodamine B fluorescence emission as a result of photo-induced intramol. electron transfer, the efficiency of which is mediated by the complexation of sodium ions. The fluorescence intensity increased linearly with increasing sodium ion concn. in the range 0.01-2.0 M, exhibiting a 3-fold enhancement over this range. The optode provides selectivity for sodium ions compared to potassium ions that is sufficient for clin. detns. of sodium ion concn.

=> log y

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